

**REMARKS**

The Office Action mailed on July 07, 2005, has been reviewed and the comments of the Patent and Trademark Office have been considered. Prior to this paper, claims 1-4 were pending. By this paper, Applicant does not cancel any claims and adds claims 5-13. Therefore, claims 1-13 are now pending.

Applicant respectfully submits that the present application is in condition for allowance for at least the reasons that follow.

**Rejections Under 35 U.S.C. § 102**

Claims 1-4 stand rejected under 35 U.S.C. §102(b) as being anticipated by EP 0 973 219 A2 (EP '219). In response, Applicant respectfully traverses the rejection and submits that the above claims are allowable for at least the reasons that follow.

Applicant relies on MPEP § 2131, entitled "Anticipation – Application of 35 U.S.C. 102(a), (b), and (e)," which states that a "claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." It is respectfully submitted that EP '219 does not describe each and every element of any of the pending claims.

For example, claim 1 recites (with respect to an exemplary embodiment of the invention of claim 1: Fig. 2) a fuel reforming system comprising a detector 601 of a first flow rate of vapors of a gas/liquid fuel and a detector 602 of a second flow rate of a gas containing oxygen. The vapors flowing through the detector 601<sup>1</sup> and the gas flowing through the detector 602<sup>2</sup> are supplied to mixer 104. According to claim 1, *a ratio* of (i) the first flow rate of the vapors to (ii) the second flow rate of the gas is corrected *depending* on the output of a temperature detector, and the gas containing the oxygen is supplied depending on the corrected ratio. In claim 1, the temperature detector 600 detects the temperature of at least

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<sup>1</sup> *i.e.*, the flow which the detector 601 detects as the first flow rate.

<sup>2</sup> *i.e.*, the flow with which the detector 602 detects as the second flow rate.

one of the vapors of the gas fuel or the liquid fuel, the gas containing oxygen, and mixture of vapors of the gas fuel or the liquid fuel and the gas containing the oxygen.

In contrast, EP '219 does not expressly or inherently describe the feature of correcting a ratio of a first flow rate of a vapor of a fuel and a second flow rate of a gas containing oxygen depending on an output of a temperature detector, where the respective flows are supplied to a mixer. EP '219 does teach, at paragraph 0092, that variations in a target A/F (air-to-fuel) value are made in view of "a representative temperature  $T_b$ ." However, this is not the same as correcting a ratio of the first and second fluid flow rates where the flows of the fluids are supplied to a mixer as claimed. The rationale for this will now be explained.

At paragraph 0031, EP '219 teaches that A/F is "the ratio of the flammable gas amount to be consumed for *heating* the reformat fuel and the amount of combustion aid gas for *burning* the flammable gas." (emphasis added.) At paragraph 0032, EP '219 teaches that "therefore, a surplus or shortage of combustion aid gas amount is adjusted . . . so that the heating temperature of the reformat fuel is optimized." (See also paragraph 0093.) That is, in EP '219, the A/F value relates to maintaining a proper heating temperature, nothing more. This is exemplified at paragraph 0043, where EP '219 teaches that, in reference to combustion portion 6 of Fig. 20, "a pump 8 for supplying methanol, *an example of the heating fuel*, is connected through an injector 9. An air feed portion 10 for supplying air, *as an example of combustion aid gas*, to the combustion portion 6 is provided." (Emphasis added.) Thus, the value of A/F is merely the amount of heating fuel to the amount of combustion aid gas supplied to combustion portion 6. This is not the same as the ratio recited in claim 1. EP '219 therefore does not teach this feature of claim 1.

\* \* \* \* \*

EP '219 also fails to teach that gas containing the oxygen is supplied depending on a corrected ratio, as is recited in the last portion of claim 1. The A/F value relates to air and methanol. Air is a gas containing oxygen, but EP '219 is silent as to whether it is the amount of air or methanol that is adjusted to obtain the desired A/F value. Thus, yet another recitation of claim 1 is not met by EP '219.

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Method claim 3, in addition to being allowable for at least the pertinent reasons that make claim 1 allowable, is also allowable because EP '219 does not teach "detecting

temperature of the vapor of the gas fuel or the liquid fuel supplied into said fuel reformer.” In EP ’219, the temperature  $T_b$  is obtained by temperature sensor 32, as is taught at paragraph 0092. As may be seen from Fig. 21, the temperature sensors 32 are downstream of the combustion portion 6, long after any alleged fuel has been mixed with air and combusted. Thus, assuming *arguendo* that the other recitations relating to the claimed ratio are met, the temperature measured is still not (it cannot be) the temperature of vapor of gas fuel or liquid fuel. Thus, claim 3 is allowable in addition to the reasons that make claim 1 allowable.

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Claim 2 is allowable at least due to its dependency from claim 1. Claim 4 is allowable for at least the pertinent reason that make claim 3 allowable.

### **New Claims**

As seen above, Applicant has added new claims 5-13. Claims 5-13 further differentiate the invention of claims 1 and 3 from EP ’219. Specifically, with regards to claims 5-7 and 11-12 EP ’219 does not teach a supplier of gas that obtains gas from atmospheric air, nor does it teach use of a compressor to do so. With regards to claims 8-9, as noted above with respect to claim 3, EP ’219 teaches that temperature  $T_b$  is obtained by temperature sensors 32, which are downstream from the combustion portion 6. Regardless, these claims are allowable for at least the reason that they depend from allowable claims. With regards to claims 10-13, EP ’219 does not teach a mixer that supplies the mixture of vapors of the gas fuel or the liquid fuel and the gas containing the oxygen to the reforming reactor, the mixture of gas and vapor supplied to the reforming reactor being un-combusted and non-converted. In EP ’219, the variables associated with the A/F value are combusted. (Again, note the position of the temperature sensor 32 downstream of the combustor.)

### **Conclusion**

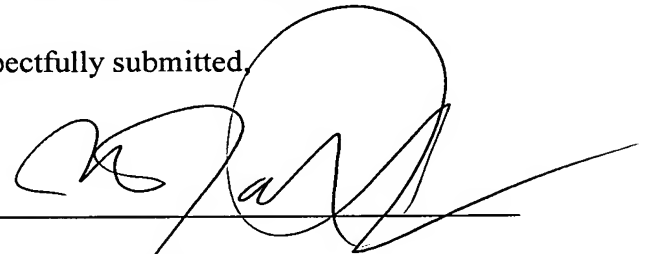
Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Examiner Wachtel is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

By

A handwritten signature in black ink, appearing to read 'Martin J. Cosenza', is written over a horizontal line. The signature is stylized with a large loop and a long horizontal stroke extending to the right.

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Date October 7, 2005

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